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Fourth Meeting of Directors of Centres Participating in the Statistical Training Programme for Africa (STPA)

Addis Ababa, Ethiopia, 4-8 November 1985

DIRECTORY OF STATISTICAL TRAINING CENTRES NOT PARTICIPATING IN THE STATISTICAL TRAINING PROGRAMME FOR AFRICA (STPA)

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INTRODUCTION

The Statistical Training Programme for Africa (STPA) continues to pursue its objectives in the area of dissemination of information on statistical training activities of interest in the countries of the region.

At the request of the third session of the Joint Conference of African Planners, Statisticians and Demographers the present first issue of the Directory of Statistical Training Centres not participating in the Statistical Training Programme for Africa was compiled. The ECA secretariat requested the centres concerned to communicate to it information on the numbers of teaching staff, teaching programmes, admission requirements, students intake and output, fees, fellowships and living conditions. The response of the centres was not very encouraging. Seven centres, one in the French-speaking countries and six in the English-speaking countries responded to the secretariat request. It is expected that the response rate of the centres will improve with time.

It is hoped that a wide dissemination of this first issue of the Directory can be ensured with the help of the National Statistical Offices and the training centres.

1. Country : Egypt

2. Name of the Centre : Institute of Statistical Studies and Research

3. Attached to : Cairo University

4. Address : Institute of Statistical Studies and Research
5 Tharwat Street
Orman, Giza
Egypt

Telegraphic address : BEHSAA, Cairo University
Telephone : 711-223
718-496

5. Name of the Head of the Centre : Prof. Abdelmergid M. Farrag

6. Objectives

The training programmes are planned to improve the skills and level of performance of workers in the field of statistics and its applications. Other activities carried out are special courses, seminars and workshops. It is also hoped that such training would enable trainees to train others in this field, in their respective countries of origin.

7. Brief historical background

The Institute is one of the oldest specialised Institutes for post-graduate studies in Egypt and the Middle East. It was established in 1947 under the name of the Institute of Statistics, and was attached to the Faculty of Commerce, Cairo University. In 1962, it became an independent entity under its present name.

8. Academic staff

There are 65 academic staff including tutors and assistant lecturers.

9. Teaching programmes

Courses offered are in the computer field namely:

(a) Computer programming courses

- Cobol
- Advanced Cobol
- Fortran
- Advanced Fortran
- Basic
- Advanced Basic

(b) Information system analysis and design

10. Admission requirements

Only university graduates are admitted to the programme.

11. Fees

Fees for the first year of study are 17 Egyptian Pounds
Fees for the second year of study are 12 Egyptian Pounds
For training courses during summer and winter the following fees apply

Summer :30-40 E.L.
Winter :80-90 E.L.

12. Fellowships

The fellowships are variable according to the type of course.

13. Living conditions

-

14. Intake and output

-

1. Country : Egypt

2. Name of the Centre : Department of Statistics

3. Attached to : Faculty of Economics and Political Science
Cairo University

4. Address : Department of Statistics
Faculty of Economics & Political Science
Cairo University
Giza, Egypt

5. Name of the Head of the Centre : Prof. Nadia Makary Girgis

6. Objectives

The objective of the Department of Statistics is to teach courses leading to the B.Sc., M.Sc. and Ph.D degrees in statistics.

7. Brief historical background

The Faculty of Economics and Political Science was founded in 1960.

8. Academic staff

In the Department of Statistics there are :

3 Full professors
4 Associate professors
8 Assistant professors

9. Teaching programmes

The programme leading to the degree in statistics is conducted in four years. The courses and credit hours for each year (grade) of study are as follows:

	Credit hours
First year (grade) (general)	
Principles of statistics	2
Principles of mathematics	2
Second year (grade) (political science)	
Applied statistics	2
(economics)	
Mathematics	2
Statistics for economics	2

	Credit hours
(statistics)	
Applied statistics	2
Mathematics	4
Principles of probability	2
Mathematical and statistical laboratory (principles of computer science)	2
Third year (grade) (statistics)	
Principles of statistical theory	3
Mathematics for statistics	3
Mathematical and statistical laboratory	3
Electronic programming	2
Mathematical economics and econometrics	2
Management and project evaluation	2
Fourth year (grade) (statistics)	
Theory of statistics	3
Stochastic processes	2
Experimental design	2
Operations research	2
Demography	2
Advanced statistical analysis	2
Sampling	2

The department also offers specialised training programmes tailored to specific organisations but without offering any formal diplomas, if they are requested to do so.

10. Admission requirements

(a) Undergraduates

To undertake a degree in statistics the requirement is as follows:

Obtaining a high school certificate and in addition pass the examination of the first general grade in the Faculty of Economics and Political Science (with adequate grades). The numbers admitted range between 30-60 students.

(b) Graduates

To undertake a post-graduate degree in statistics, the following requirements apply:

- To join the M.Sc programme, one must obtain a B.Sc. degree in statistics.
- To join the Ph.D programme in statistics, one must obtain an M.Sc. degree in statistics.

Numbers admitted range between 10-20 for the M.Sc. programme and 0-5 for the Ph.D programme.

11. Fees

Once admitted to the programme tuition fees are free.

12. Fellowships

-

13. Living conditions

The conditions for the students in the Department of Statistics are the same as the rest of the students in the Cairo University.

14. Intake and output

See item 10 for some of the information on numbers admitted.

1. Country : Ethiopia

2. Name of the Centre : Department of Statistics

3. Attached to : Addis Ababa University

4. Address : Department of Statistics
Faculty of Science
Addis Ababa University
P.O. Box 1176
Addis Ababa, Ethiopia

5. Name of the Head of the Centre : Dr. Ayenew Ejigou

6. Objectives

The primary objective of the degree programme has been to train junior statistical professionals who will serve in the collection, processing and analysis of statistical data. The department has also the objective of offering service courses to other teaching units in the University.

7. Brief historical background

Based on the recommendations of the First African Statisticians Conference which was held in 1959, the United Nations established statistical training centres in Africa on a regional basis. The Centre for the East African region was opened in Ethiopia in 1961. The Centre was located in the Faculty of Science of the former Haile Selassie I University and provided a one-year programme leading to a certificate in statistics for candidates deputed by different governments of the region. The name of the Centre was "UN Statistical Training Centre". The Centre operated during the years 1961-1965.

The Centre functioned under the auspices of the United Nations through the Economic Commission for Africa (ECA), the Ethiopian Government and finally through the then University College of Addis Ababa. A director recruited through ECA was assigned to run the programme.

The objectives of the programme were:

(a) to organize courses in statistical methods and techniques so as to prepare trainees from African countries for middle-grade jobs in Statistical Offices;

(b) to arrange for the participation of the trainees in field surveys organized by the Government of Ethiopia and other African countries;

(c) to provide consultancy services on problems of training statistical personnel in Governments in Africa or their agencies.

The courses offered to the trainees were mainly in Economics and Agriculture oriented subjects. The trainees had to complete 34 credit hours in two semesters to be elegible for the award of a certificate.

The view of the growing demand for highly qualified statistical personnel, the Government of Ethiopia instituted two additional programmes in 1966/67 academic year. The programmes were the Diploma and Degree in statistics. At this time, the Centre was renamed "Statistical Training Centre". These different levels of training operated simultaneously under the supervision of the Faculty of Science within the Mathematics Department until 1973 when the training Centre was reorganized and named the "Department of Statistics".

In 1973, the certificate programme ended and the Diploma programme started in the Extension Division.

The degree and diploma programmes which started in 1966/67 academic year continued up to 1977. During 1977, the Diploma programme was terminated. Since 1977, the Department of Statistics run the degree programme during the day and the diploma programme in the Extension Division. The graduate programme in statistics was viewed to start in 1982/83 academic year.

8. Academic staff

The academic staff of the Department of Statistics consist of:

One Associate Professor who is also Head of Department
Three Assistant Professors
Two Lecturers
Two Assistant Lecturers

Five more staff were on study and research leave abroad at the time this information was submitted to ECA. The Department also relies very strongly on staff from the Department of Mathematics.

9&10 Teaching programmes and admission requirements

The Department offers the following programmes:

Statistics Diploma (extension)
B.Sc. degree (regular) in statistics

(a) Statistics Diploma (extension)

(i) Duration of the course : 4 years

(ii) Entrance requirements

- At least three C's in the Ethiopian School Leaving Certificate Examination which should include English and mathematics, and/or
- Completion of a certificate programme in statistics with a grade point average of at least 1.50.

(iii) Courses

First year

Course	Semester	Credits
101 Dialectrical Materialism	I	3
- Freshman English I	I	3
100 Preliminary Mathematics	I	4
102 Historical Materialism	II	3
- Freshman English II	II	3
153 Freshman Mathematics	II	4
173 Introduction to Statistics	summer	3

Second year

- Eth. Studies I	I	3
261 Calculus I	I	4
- Eth. Studies II	II	3
262 Calculus II	II	4
275 Introduction to Probability	summer	3

Third year

- Econ. I	I	3
271 Statistics I	I	4
- Econ. II	II	3
272 Statistics II	II	4
175 Applied Statistics I	summer	3

Fourth year

176 Applied Statistics II	I	3
375 Sample & Survey Methods	I	4
376 Design of Experiments	II	3
383 Field Work	II	2

Qualification for graduation

To qualify for the Diploma award, a candidate must achieve a cumulative GPA of at least 1.50.

(b) B.Sc. (regular) in statistics

(i) Duration of the course : 4 years

(ii) Entrance requirements

A candidate must have passed the Ethiopian School Leaving Certificate Examination (ESLCE) or its equivalent.

(iii) Courses

Compulsory statistics courses

Course	Credits
Stat. 173 Introduction to statistics	3
Stat. 177 Statistical Organisation & Manpower	2
Stat. 271 Statistics I	4
Stat. 272 Statistics II	4
Stat. 275 Introduction to Probability	3
Stat. 374 Introduction to Data Processing with Computer	3
Stat. 375 Sample and Survey Methods	4
Stat. 376 Design of Experiments	3
Stat. 378 Demography	3
Stat. 379 Applied Statistics I	4
Stat. 380 Applied Statistics II	4
Stat. 386 Econometrics	3
Stat. 375 Statistical Theory of Distribution	3
Stat. 476 Statistical Inference	3
Stat. 179-480 Research Project	2-2
One course will be taken out of the following	
Stat. 381 Social Accounts	3
Stat. 477 Operations Research	3

Maths Minor

Compulsory Mathematics Courses

Course	Credit
Math. 100 Preliminary Mathematics	4
Math. 153 Freshman Mathematics	4
Math. 223 Fundamental Concepts of Algebra	3
Math. 224 Introduction to Linear Algebra	3

Compulsory Mathematics Courses (cont'd)

Course	Credit
Math. 261 Calculus I	4
Math. 262 Calculus II	4
Math. 263 Calculus III	4
Math. 381 Ordinary Differential Equations	4
Math. 385 Numerical Analysis	3

Elective Mathematics Courses

A minimum of one course will be taken

Math. 323 Modern Algebra I	3
Math. 324 Linear Algebra II	3
Math. 113 Elementary Plane Geometry	3

General Studies

Social Studies

Phil. 101 Dialectrical Materialism	3
Phil. 102 Historical Materialism	3
Econ. 101 Political Economy	3
Econ. 102 Political Economy	3
Econ. 201-202 Theory of Pricing & Resource Allocation	3-3
Econ. 301 Aggregate Economic Analysis I	3
Econ. 302 Aggregate Economic Analysis II	3
Hist. 102 Introduction to Ethiopian History	3
Geog. 101 Introduction to Ethiopian Geography	3

Language

FlEn I Freshman English I	3
FlEn II Freshman English II	3
FlEn III Sophomore English	3

Biology

Bio. 100 Introduction to Biology	4
Bio. 106 Principles of Biology	3

Course	Credit
Physics	
Phy. 100 General Physics I	4
Phy. 104 General Physics II	3
Chemistry	
Chem. 100 General Chemistry	4

(iv) Qualification for graduation

(a) To qualify for the award of the B.Sc. degree in Statistics, a candidate is required to take at least 53 semester credit hours in statistics, about 30 in Mathematics, 9 in English, 7 in Biology, 7 in Physics, 4 in Chemistry and 30 in Social Sciences. The candidate must also pass with a grade point average of 2.0 or better. In addition, the candidate is required to present a senior paper in Statistics.

(b) Statistics majors may not graduate with more than three D's or with any grade of F or with a GPA of less than 2.0 in statistics courses. The GPA in mathematics should also be not less than 2.0 but students may graduate with one or more D grades but with no F grade.

(c) Graduate program proposals in statistics

The department was at the time of reporting making final preparations to launch a graduate programme in statistics in 1982/83.

The programme has two principal objectives:

- To train statisticians that provide the necessary professional support for the orderly development of economic and social services.

- To train staff that would be engaged directly or indirectly in university teaching.

The graduate program is to emphasize application particularly applied statistics. Students seeking a graduate degree in statistics are expected to be familiar with modern statistical theory, the supporting mathematics and its applications.

(i) Duration of the course

A minimum of two years for the M.Sc. degree and a maximum of 5 years.

(ii) Entrance requirements

Apart from the rules governing admission to the Graduate School, a graduate student in statistics should have either

(a) a Bachelors degree in statistics, or

(b) a Bachelors degree in mathematics with minor in statistics, or

(c) a Bachelors degree in Economics with proper orientation in statistics and adequate background in differential and integral calculus, or

(d) a Bachelors degree in any other area with a good background in differential and integral calculus as well as sufficiently good knowledge of element of Statistical Methods.

(iii) Type of degree programme

The programme is available either with thesis (Plan A) or without thesis (Plan B). The former being subject to the approval of the student's advisor and the Faculty's academic commission in accordance with the rules of the Graduate School.

Plan A requires at least 24 semester credits of which at least 18 credits are in statistics (including Stat. 571-572, 574, 575 and 576). Plan B requires at least 30 semester credits of which 24 are in statistics, excluding project papers that may be written. Stat. 571, 572, 574, 575, 576 will be compulsory. The course descriptions are given below. Any courses in linear algebra, analytic geometry and advanced calculus will not count towards the degree programme.

(iv) Examinations and grades

A written comprehensive examination will be given at the end of the second semester of the first year to students of all options. At the end of two years, an oral examination will be given to those who choose the "without thesis" option, whereas those who have written a thesis will defned their thesis in front of an appropriately constituted committee. To sit an oral exam you have to pass the comprehensive exam first. Failures are given one more chance.

There will be no more than a total of two C's in statistics and mathematics in any student record. The overall cumulative GPA for graduate courses will be no less than 3.00 on a 4.00 scale. Failure to meet this results is immediate dismissal.

(v) Courses

	Credits
571 Statistical Theory I	3
572 Statistical Theory II	3
574 Introduction to computer methodology	3
575 Sampling theory and applications	3
576 Linear models	3
577 Applied Regression Analysis	3
578 Demographic Analysis	3
579 Time Series Analysis	3
580 Econometrics	3
581 Introduction to Multivariate Methods	3
582 Non-parametric Methods	3
583 Research	-

11. Fees

-

12. Fellowships

-

13. Living conditions

-

14. Intake and output

-

1. Country : Kenya

2. Name of the Centre : Division of Statistics

3. Attached to: Department of Mathematics
University of Nairobi

4. Address: P.O. Box 30197
Nairobi
Kenya

Telephone: 43185 ext. 298

Telegraphic address : VARSITY, Nairobi

5. Name of the Head of the Division : Professor M.S. Patel

6. Objectives

The centre has the objective of training students for Bachelor of Science, Master of Science and Doctor of Philosophy degrees in statistics. It has also the objective of training students for post-graduate diploma in statistics.

7. Brief Historical Background

The Division of Statistics started operating effectively from 1975 and is sponsored by the University of Nairobi. Its first output of graduates in statistics was in 1978. Originally statistics courses at the University of Nairobi were taught in the Mathematics Department.

8. Academic staff

The academic staff of the Division of Statistics consist of:

One Professor who is also head of the Division
One Senior lecturer
Two Assistant lecturers, one lecturer
One tutorial fellow

9&10 Teaching programme and admission requirements

The Division of Statistics is at present running the following programmes:

Diploma in Statistics
Bachelors Degree in Statistics
Masters Degree in Statistics
Doctorate Degree in Statistics

(a) Diploma in statistics

(i) Duration of the course: One academic year
(ii) Number of places offered in 1984: The programme is not under operation due to lack of students

(iii) Entrance requirements

This is a post-graduate course in statistics for those working in statistical institutions but have no formal training in statistics. Candidates must be graduates of recognised Universities with mathematics as a principal subject at A-level.

(b) B.Sc. degree in Statistics

(i) Duration of the course: Three years
(ii) Number of places offered in 1984: 55
(iii) Entrance requirements

- A school certificate or general certificate of education with passes in five approved subjects obtained prior to the sitting of the higher school certificate or advanced level of the General Certificate of Education, and

- One of the following combination of passes in the higher school certificate examination or advanced level of the General Certificate of Education.

  1. Two principals or advanced level passes obtained at the same sitting.

  2. Two principals or advanced level passes obtained at different sittings or the same sitting provided that both passes are of grade C or higher.

The conditions specified above apply to applicants who have prepared themselves by private study in the high school certificate level. The above requirements should be regarded as minimum.

There is also a mature age qualifying scheme for admission which are specified in the University Calendar.

(iv) Courses

The degree students are required to take a selection of the following courses in addition to some courses in mathematics, chemistry, physics, geography, economics or geology.

First Year

I155 : Probability and Statistics I

Second Year

I269 : Probability and Statistics II

I26D : Sample Survey

I26C : Advanced Statistics

I26J : Operations Research I

I26E : Quality Control and Acceptance Sampling

Third Year

I368 : Operations Research II

I36F : Theory of Estimation

I36H : Time Series Analysis

I369 : Operations Research III

I36G : Tests of Hypotheses

I36J : Design and Analysis of Experiments

I36L : Non-parametric Methods

I36K : Statistical Methods of Econometrics

(c) Masters Degree in Statistics

(i) Duration of the course: Two academic years

(ii) Number of places offered in 1984: 4 (Part I) + 4(Part II)

First year	Second year

(iii) Entrance requirements

The general requirements for admission to the masters degree in the Mathematics Department apply to those wanting to major in statistics and operations research. In general candidates must have taken mathematics as a major subject in their first degree. The first degree should normally be of at least second class honours (upper division) standard or equivalent. The common regulations for Masters degree applicable to all faculties are also applicable.

(iv) Courses

Candidates shall take three courses in the first year of study and after passing the prescribed examinations at the end of the first year, candidates will take three more courses or two courses and a project (in lieu of a course) or undertake a research project in the second year which will be examined by thesis. Candidates will specialise in Mathematical statistics, Biostatistics or Operations Research and Computer science.

11. Fees

	Tuition (KSh/annum)	Residence (3 terms)(KSh)
Undergraduates	29,000	5,775
Occasional student	3,000	5,775
Postgraduate student	6,000	-

The above fees are for the 1982/83/84 academic years and are quoted in Kenyan Shillings.

12. Fellowships

-

13. Living conditions

Most of the students live in halls of residence in the University main campus. There are five campuses, all but one of which are within the city of Nairobi.

14. Intake and output

Course/year	1979	1980	1981	1982	1983	1984	1985
B.Sc. statistics	42	45	94	nil (no exam)	45	25	55 (due)
M.Sc. statistics		(29)					
Ph.D. statistics		(3)					

Those in brackets are the numbers reported to have graduated by September 1984.

1. Country : Nigeria

2. Name of the Centre : Department of Demography and Social Statistics

3. Attached to: : University of Ife, Ile-Ife, Nigeria

4. Address: : Department of Demography and Social Statistics
University of Ife
Ile-Ife, Nigeria

Telephone: 220-2299

Telegram: IFEVARSITY, Ile-Ife

5. Name of the Head of the Centre : Dr. Joshua A. Ebigbola

6. Objectives

The objectives of the department are:

(a) to provide courses of instruction in Demography and Social Statistics

(b) to conduct research into population and related social problems in Nigeria

(c) to provide consultancy services

The department offer courses leading to Bachelor of Science (Social Science), Master of Science and Doctor of Philosophy degrees.

7. Brief Historical Background

The department was created out of the Institute of Population and Manpower Studies, at the beginning of the 1975-76 academic session. The Institute of Population and Manpower Studies was supported since October, 1968 with grants from the Population Council of New York.

8. Academic staff

The department academic staff consists of:

One Professor
Three Senior Lecturers
Four Lecturers, and
Three graduate assistants

One of the Senior lecturers is the head of department and the three graduate assistants are currently on study leave.

9&10 Teaching programme and admission requirements

The department offers the following programmes:

Bachelor of Science (Social Science) degree in Demography and Social Statistics

Master of Science degree in Demography and Statistics

Doctor of Philosophy degree in Demography and Social Statistics

(a) B.Sc. (Social Science) degree in Demography and Social Statistics

(i) Duration of the course: 3 years for those entering with GCE 'A' levels
4 years for those entering with GCE 'O' levels

(ii) Number of places offered in 1984: 40

(iii) Entrance requirements

The minimum entry requirements for the B.Sc. (Social Science) degree are 5 credits which must include credits in Mathematics and English in the West African School Certificate or a pass at GCE 'O' level in five subjects which must include English and Mathematics. Candidates holding qualifications higher than those prescribed a minimum entry shall have their qualifications assessed and equated to equivalent courses in the relevant facilities.

(iv) Courses and residential requirement

Students with GCE 'O' level or equivalent take a one year preliminary course and are joined by those with GCE 'A' levels or equivalent in their second year. Candidates for the degree programme are expected to take certain core courses in the fields of Demography and social statistics in addition to taking elective courses in other social sciences (e.g. Economics, Political Science, Sociology etc.) as well as in Computer science, Agricultural Economics and Mathematics. To qualify for the degree, there is a minimum residential requirement of two academic years for each candidate.

(b) M.Sc. degree in Demography and Social Statistics

(i) Duration of the course: minimum of four terms

(ii) Number of places offered in 1984: 7

(iii) Entrance requirements

Candidates will be graduates of the University of Ife or other approved universities and will normally be expected to hold a second class upper (honours) degree in Demography or related subjects; though in exceptional cases, candidates with a lower qualification may be offered admission.

(iv) Courses

The courses comprise of advanced demographic techniques and methods as well as advanced social statistics. A research paper based on an individual effort of the student in addition to some supervisor from an academic staff must be written. A minimum of 50% (Grade B) pass in each of the courses taken must be satisfied in order to be awarded the degree.

(c) Ph.D degree in statistics

(i) Duration of the course: minimum of six semesters

(ii) Number of places offered in 1984:

(iii) Entrance requirements

Candidates must have a masters degree in Demography of the University of Ife with an average of B+ in their final examination and in the Research paper. Candidates holding Master's degree in Demography or related field from another approved University will be offered admission to the program after fulfilling some conditions.

(iv) Courses

The degree is based on research and is primarily designed for candidates who intend to take up teaching or research work in demography or Social statistics.

11. Fees

Tuition fees are free for all Nigerian undergraduates. All Nigerian post-graduate students, foreign students (undergraduates and postgraduates) pay tuition fees. The rates are as follows per session.

(i) Undergraduate non-Nigerian students

Undergraduate science ₦704

These fees include ₦20 deposit and ₦4 student union fees

(ii) Postgraduate Nigerian student

Postgraduate science ₦204

(iii) Postgraduate foreign student

Natural science ₦1000

Humanities ₦ 700

12. Fellowships

The university does not offer full-time fellowships to students. Graduate assistantship can be given to postgraduate students for their support. In practice this means the students would be working for the department as well as being registered as students. Fellowships obtained from international funding agencies can also be utilized for the maintenance of the students while studying in the department.

13. Living conditions

Accommodation can be obtained in the halls of residence at both undergraduate and postgraduate levels.

14. Intake and output

1. Country : Nigeria

2. Name of the Centre : Department of Statistics

3. Attached to : Faculty of Physical Sciences,
University of Nigeria

4. Address : Department of Statistics
Faculty of Physical Sciences
University of Nigeria
Nsukka Campus

Telegraphic address : NIGERSITY NSUKKA
Telephone : Nsukka 6251

5. Name of the
Head of the Centre : Dr. I.B. Onukogu

6. Objectives

The major objective of the under-graduate programme is to prepare students for a career as statisticians. To achieve this, objective courses are offered in key areas of statistics such as Probability and Stochastic processes, Design and analysis of Experiments, Statistical methods and Inference, Sampling technique, Quality control and Operations Research. Laboratory, field work and research project provide opportunity to apply the theory learned in a classroom.

The post-graduate program is aimed at training students thoroughly in contemporary knowledge of their major areas of interest and to contribute to that knowledge through scientific investigation.

7. Brief historical background

The Department of Statistics is part of the Faculty of Physical Sciences of the University of Nigeria. The Department is located at Nsukka Campus.

8. Academic staff

The department has a total staff of 11 composed of one professor, six senior lecturers and four lecturers.

9&10 Teaching programme and admission requirements

The Department offers the following programmes:

B.Sc. (Hons) degree in statistics
B.Sc. combined (Hons) degree in statistics with mathematics, economics or computer science
M.Sc. degree in statistics
Ph.D degree in statistics

(a) B.Sc. (Hons) and B.Sc. combined (Hons) degrees in statistics

(i) Duration of the course: Four years for those candidates who enter by entrance examination and three years for direct entry candidates.

(ii) Entrance requirements

In addition to the minimum university requirements, candidates must have passed at the West African School Certificate examination or an equivalent examination with credits in statistics or additional mathematics or mathematics and physics or chemistry or economics. Direct entry candidates in addition to the above, must pass the Higher School Certificate examination or at the GCE A level in two subjects one of which must be mathematics.

(iii) Courses

Students are required to take the following courses in addition to some courses they will take in mathematics, physics, chemistry economics, biology or agriculture. The courses are detailed below:

- First year

Major courses	Title	Credit
Stat. 111	Probability I	6
Stat. 131	Inference I	6
Stat. 132	Laboratory for Inference I	3
Required ancillary courses		
Math. 111A	General mathematics I	4
Math. 112B	General mathematics II	4
Math. 113C	General mathematics III	4
General studies		
G.S. 101	The use of English	6
Elective courses		
Any 12 credit combination from the following:		
Math. 131A	Mechanics I	3
Math. 132B	Mechanics II	3
Math. 133C	Mechanics III	3
Phy. 104	General Physics for Engineering and Physical Sciences I	3
Phy. 105	General Physics for Engineering and Physical Sciences II	3
Phy. 106	General Physics for Engineering and Physical Sciences III	3

Elective courses(cont'd)	Title	Credit
Phy. 191	Practical Physics I	3
Chem. 101	Basic Principles of Chemistry I	3
Chem. 111	Basic Principles of Chemistry II	3
Chem. 121	Basic Principles of Chemistry III	3
Chem. 171	Practical Chemistry	3
Geol. 103B	Basic and Applied Geology for Enviromental and Physical Sciences	4
Econ. 101A	Principles of Economics I	3
Econ. 102B	Principles of Economics II	6
Biol. 151A	General Biology	4
Biol. 151B	General Biology	4
Biol. 151C	General Biology	4
Ag. 101	Introduction to Agriculture	3

Mathematics, Physics and Chemistry should be taken together as a group.

- Second year

Major courses

Sta. 211	Probability II	6
Sta. 231	Inference II	6
Sta. 232	Laboratory for Inference II	3

Required Ancillary

Math. 221A	Calculus and Analytic Geometry I	3
Comp. 214AB	Computer Programming for Phy.Scs.	6

General studies courses

G.S. 103	Social Science	6
G.S. 207	Humanities	6

Elective courses

A minimum of 9 credits from the following:

Econ. 201A	Economic Theory I	3
Econ. 202BC	Economic Theory II	6
C.Sc. 312	Introduction to Crop Science	6
Math. 212B	Linear Algebra I	3
Math. 224C	Calculus and Analytic Geometry II	3

- Third year

Major courses	Title	Credit
Sta. 311	Probability III	6
Sta. 321	Distribution theory	3
Sta. 331	Inference III	6
Sta. 332	Laboratory for Inference III	3
Sta. 341	Sampling theory & methods	6
Sta. 342	Laboratory & field work for sampling	3
Sta. 361	Algebraic Basis of Operations Research	3

Elective courses

A minimum of 16 credits from the following:

Sta. 323	Biometrics	6
Sta. 324	Regression Analysis I	3
Sta. 325	Analysis of variance I	3
Sta. 343	Statistical Quality Control	6
Sta. 344	Laboratory and Field Work for Statistical Quality Control	3
Sta. 351	Demography	6
Sta. 352	Laboratory and Field Work for Demography	3
Sta. 362	Operations Research	6
Sta. 363	Laboratory for Operations Research	3
Math. 324B	Complex Variables I	3
Math. 327C	Complex Variables II	3
Econ. 431A	Econometrics I	3
Econ. 431B	Econometrics II	6
C.Sc. 531A	Field Experimentation	3

- Fourth year

Major courses		
Sta. 412	Stochastic Processes	6
Sta. 413	Stationery Time Series	6
Sta. 421	Design and Analysis of Experiments	6
Sta. 431	Bayesian Inference	6
Sta. 431	Non-parametric Methods	6
Sta. 491	Project	6

Elective courses	Title	Credit
A minimum of 12 credits from the following:		
Sta. 411	Probability IV	6
Sta. 422	Regression Analysis II	3
Sta. 423	Biometrics	6
Sta. 424	Analysis of Variance II	3
Sta. 433	Multivariate Methods	6
Sta. 434	Psychometrics	6
Sta. 461	Operations Research	6
Sta. 462	Decision Theory	6
Sta. 463	Laboratory for Operations Research	3

Note: The three year degree programme is the same as the four year standard programme excluding the first year. However, the direct entry students are required to take G.S. 101, G.S. 103 and G.S. 207 courses during their first year.

(b) M.Sc. and Ph.D degrees in statistics

(i) Duration of the course : M.Sc. twelve calender months
Ph.D. thirty six calender months

(ii) Entrance requirements

A good honors degree in which mathematics constitutes a substantial part

(iii) Courses

The Department offers post-graduate programmes leading to M.Sc. and Ph.D degrees in statistics with majors in the following areas:

Stochastic modelling
Methods and Inference
Experimental and Applied Statistics
Operations Research and Industrial Statistics
Social Statistics

The available courses are as follows:

	Title	Credit
Sta. 511	Basic Probability Theory	6
Sta. 512	Stochastic Processes	6
Sta. 521	Linear Statistical Models and Multivariate Analysis	6
Sta. 522	Statistical Inference	6
Sta. 523	Non-parametric Methods	6
Sta. 524	Advanced Bayesian Inference I	6

	Title	Credit
Sta. 525	Advanced Bayesian Inference II	6
Sta. 531	Advanced Biometrics	4
Sta. 532	Psychometrics	4
Sta. 533	Regression Analysis	3
Sta. 541	Advanced Linear Programming	4
Sta. 542	Optimization techniques	6
Sta. 543	Theory of non-Linear Programming	6
Sta. 544	Geometric Programming	4
Sta. 545	Theory of Games	4
Sta. 546	Stochastic Programming	4
Sta. 547	Reliability	3
Sta. 548	Decision Analysis	3
Sta. 549	Network Analysis	4
Sta. 550	Stock Control	4
Sta. 551	Dynamic Programming	4
Sta. 552	Simulation techniques	6
Sta. 553	Applications of Operations Research	4
Sta. 554	Systems Analysis and Project Management	4
Sta. 561	Operations Research III	3
Sta. 562	Statistical Methods in Social Research I	6
Sta. 563	Statistical Methods in Social Research II	6
Sta. 564	Advanced Demography	3
Sta. 565	Advanced Economic Statistics	3
Sta. 566	Forcasting Socio-Economic Models	3
Sta. 590	Seminar	
Sta. 591	M.Sc. Project	
Sta. 592	M.Sc. Dissertation	
Sta. 593	Ph.D. Thesis	

Application for entry: details about application forms are obtainable from the Director, School of Postgraduate Studies, University of Nigeria, Nsukka, Anambra State.

11. Fees

The fees are as follows for 1981/82 academic session:

	First degree and Certificate courses (N)	Higher degree and P/G Diploma (N)
Tuition (foreign students only)	500-1000	700-1250
Accomodation (on campus students)	(as applicable)	(as applicable)
Accomodation (on campus students)	90.00	260.00
Student Union	5.00	5.00
Laboratory (as applicable)	8.00	8.00
Examinations	20.00	20.00
Caution Deposit (new students only)	25.00	25.00
Extra fee (post-graduates only)	-	100.00

12. Fellowships

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13. Living conditions

Enrolment and registration of the students by the Registrers Office as fully residential qualify such a student for residence on campus. This presupposes the student's guarantee to abide by hostel regulations. Students are also permitted to live out of the campus at their request.

14. Intake and output

The number of graduands from 1979/80-1983/84 by degree course are as follows:

Degree course	1979/80	1980/81	1981/82	1982/83	1983/84
B.Sc.	11	12	14	14	21
M.Sc.	-	1	2	1	-
Ph.D	-	-	-	-	-

FRENCH-SPEAKING CENTRES

1. Country : Zaire

2. Name of the centre : Institut supérieur de statistique de Lubumbashi (I.S.S.)

3. Attached to : Département de l'Enseignement supérieur et universitaire

4. Address : B.P. 2471, Lubumbashi - Shaba (Zaire)

5. Name of the Director : M.E. Dehousse

6. Objectives

The "Institut supérieur de statistique de Lubumbashi (I.S.S.) aims at training "techniciens et ingénieurs techniciens en travaux statistiques," so as to meet the requirements of the Industrial sector and the Department of Planning of the country. In this connection, the ISS has widened its training programme in areas such as: political economy, economic analysis, demography, planning, national accounting and public finance.

7. Brief historical background

The "Institut supérieur de statistique de Lubumbashi" was established in 1967 within the former "Université officielle du Congo," with assistance from the "Société Gecamines," which was producing the copper and the cobalt. Its first Board of Governors included the representatives of the Institutes of Statistics of the Universities of Brussels and Paris.

ISS became autonomous by the Departmental Order No. EDN/BCE/001/0081/75 of 1 September 1975 which also defined its programmes and fixed the number of years of study in preparation for a legal academic qualification. By a Decree No. 81-175 of 7 October 1981, ISS was given a civil status and became independent of the university.

ISS comes directly under both the Commissioner of State for Higher and University Education and the Board of Governors of the "Instituts supérieurs techniques du Zaire". ISS operates under a co-operation agreement concluded between Belgium and Zaire.

8. Academic staff

ISS has 17 full-time and 7 part-time lecturers. The full-time lecturers include 5 expatriates (Belgian, Dutch and Polish) and 12 nationals of Zaire. The part-time lecturers include 3 expatriate lecturers, all Belgians, and 4 Zairian lecturers.

9&10. Teaching programmes and admission conditions

ISS provides two cycles of teaching

(a) "Cycle de graduat"

(i) Duration : 3 years

(ii) Entry requirements : Holders of "Diplôme d'Etat" preferably option math-physics, obtained with 55% minimum mark.

(iii) Number of places offered in 1984 : 120

(iv) Use of time : Instructions for the "graduats" during the first year consists of 480 hours of lectures and 315 hours of practicals.

Instruction for those students admitted into the second year consist of about 510 hours of lectures and 345 hours of practicals. Those in the third year, have about 465 hours of lectures and 300 hours practicals. A three-month academic course of about 520 hours is organized for those in the third year.

The breakdown of the teaching hours is as follows for each discipline

First year

Subject	Number of hours (Lectures and Practicals) Lectures	Practicals	Total
Civics and development	45	-	45
Logic and written and oral expression	45	-	45
Linear Algebra	30	30	60
Infinitesimal Analysis I	60	60	120
Analytical Geometry	30	30	60
Numerical calculus	30	30	60
Introduction to calculus of probabilities	30	30	60
Descriptive statistics and design applied to statistics	60	60	120
Introduction to accountancy	45	30	75
Data collection techniques	15	15	30
Business correspondence	15	15	30
Sociology	30	-	30
Notions of political economy	45	15	60
TOTAL	480	315	795

Second year

Subject	Number of hours (Lectures and Practicals) Lectures	Practicals	Total
Infinitesimal Analysis II	30	30	60
Matric Algebra	30	15	45
Calculus of Probabilities	30	30	60
Mathematical statistics	30	30	60
Applied statistics I	30	15	45
Numerical analysis, graphs and use of machines	30	30	60
Financial Algebra	30	15	45
Business Accounting	30	30	60
Business Management (classification and management of a statistical office)	30	15	45
Elements of economic analysis	45	30	75
Elements of demography	45	15	60
Elements of computer science	30	30	60
Technical English I	30	-	30
Course:- Experimental physics	45	30	75
- Marketable products	45	30	75
TOTAL	510	345	855

Third year

Subject	Number of hours (Lectures and Practicals) Lectures	Practicals	Total
Applied Statistics II			
- Applied statistics	15	30	45
- Theory of indices	15	15	30
- Economic and social statistics	15	15	30
- Demographic statistics	15	15	30
- Agricultural statistics	15	15	30
- Trade and transport statistics	15	-	15
- Industrial statistics	15	15	30
Computers, computer programming and flow charts			
- Programming and flow charts	30	30	60
- Study of a machine language	30	30	60
- Theory and use of computers	30	-	30

Third year (cont'd)

Subject	Number of hours (Lectures and Practicals) Lectures	Practicals	Total
Operations research			
- Theory of graphs and P.E.R.T. method	30	15	45
- Stocks and equipment management	30	15	45
Analytical Company accounting	30	15	45
Theory of public administration	15	-	15
Public Finance and National Accounting	30	30	60
Organization of enterprises	15	-	15
Human and economic geography	30	30	60
Elements of planning and African Social dynamics	30	15	45
Political, administrative and social institutions of Zaire	15	-	15
Elements of public and private law	15	-	15
Professional ethics and deontology	15	-	15
Technical English II	15	15	30
Three months practical course	-	520	520
Writing of an end of course paper	-	-	-
TOTAL	465	820	1285

(v) Awards

Students who have successfully completed their course are awarded a diploma in statistics.

(b) Cycle of degree

(i) Duration : 2 years

(ii) Admission conditions: To qualify for admission for the cycle of degree programme, candidates should:

- have passed with distinction the third cycle course in statistics or be engineers or graduates in another discipline passed with distinction,
- should not have repeated a class during their studies,
- have worked for two years after the third cycle studies,
- provide recommendations from their employers
- have passed an entrance examination organized by I.S.S.
- attach an academic record indicating the distinctions obtained.
- complete in duplicate an application form for admission into I.S.S.

(iii) Number of places offered in 1984 : 25

(iv) Use of time: The first year course comprises 420 hours of lectures and 405 hours practicals. Those in their second year do 300 hours of lectures and about 1165 hours of practicals, broken-down as follows:

Professional practice	350 hours
Four months course	680 hours
Actual practical work	135 hours

The distribution of the hours according to each discipline is as follows:

First year

Subject	Number of hours (Lectures and Practicals) Lectures	Practicals	Total
Additional Mathematics	45	45	90
Special computation methods	30	30	60
Probability and theory of errors of observation	30	30	60
Mathematical statistics	30	15	45
Methods of statistical research, opinion polls, census and investigations	30	30	60
Economic statistics	30	15	45
Additional operations research I			
- "Files d'attente"	15	-	15
- Stocks Management	15	-	15
- Equipment Management	15	-	15
- Payment Orders	15	15	30
Planning	15	15	30
Microeconomics	30	15	45
Computer Science I	30	15	45
Special Accounting	30	30	60
Study of African Societies	30	15	45
Demography	30	15	45
Additional operations research II (partly an advanced course)			
- Linear programming	30	15	45
Financial Management (advanced course)	15	15	30
Methods of mathematical programming and introduction to practical calculations	30	15	45
TOTAL	420	405	825

Second year

Subject	Number of hours (Lectures and Practicals) Lectures	Practicals	Total
Applied mathematical statistics to industrial management	30	15	45
Method of mathematical programming and introduction to practical calculation	30	15	45
Mathematical statistics (1st degree course continuation)	30	15	45
Dynamic Programming and Markov chains	15	15	30
Simulation Method	15	15	30
Macroeconomics	30	-	30
Econometrics	30	15	45
Computer management systems	15	-	15
Machine language, analysis and programme	30	15	45
General accounting and company analytical accounting	30	30	60
Financial Management	15	-	15
Enterprise Organisation and Management	30	-	30
Professional practice (including 200 hours carried forward from 1st degree)	-	350	350
Four months practical course	-	680	680
TOTAL	300	1165	1465

(v) Awards

Students who successfully complete their second year course are awarded a degree in Statistics.

(c) Academic year

For both cycles, the academic year begins around 15 October and ends on 31 July of each year. However, there are two vacations:

One week during the X'mas and New Year season
Two weeks during the Easter season

11. Tuition fees

The annual tuition fees for all cycles is 250 Zaires and is payable at the time of registration.

12. Scholarships

Admission into I.S.S. scholarship automatically entitles a student to Zaire Government's scholarship.

13. Living condition

I.S.S. provides boarding facilities for its students.

14. Intake and output

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